

On a New Pearl-fish, *Carapus owasianus* with Notes on the Genus *Jordanicus* GILBERT

Kiyomatsu MATSUBARA

(Dept. Fisher., Fac. Agri., Kyoto Univ.)

The new species here described under the name of *Carapus owasianus* is based on a specimen (MATSUBARA's Fish Coll. No. 18871) obtained by a deep-sea trawler on November 17, 1952 from off Owasi, Mie Prefecture, at a depth of about 100 hiro (about 151.5 meters). The present study is a part of the results of our investigations on the deep-water fishes of Japan and its adjacent regions. The expenses for the studies of the present series were defrayed from 1943 to 1945 from a research fund contributed by Viscount Keizo SHIBUSAWA and since 1948 from the grant-in-aid by the Ministry of Education.

Carapus owasianus, new species

Soko-kakureuo (new Japanese name)

Pectoral fin rays 16. Branchiostegal rays 7. Gill-rakers, inclusive of tubercular ones, on first arch $3+8=11$. Head length 8.47 in total length; depth at insertion of anal fin 16.80; distance from tip of snout: to dorsal fin origin 6.77, to anal fin origin 7.30, to vent 7.92. Breadth 1.42 in height. Eye diameter 4.96 in head length measured from tip of snout to end of opercular flap; snout 4.50; upper jaw 2.07; interorbital space 8.86; postorbital part of head 1.69; pectoral fin length 1.94; width of pectoral fin base 10.00; distance of origin of dorsal fin from head 3.54; caudal fin length 6.2.

Body rather stout, compressed, much higher than wide, tapering into a pointed tail. Head about as broad as deep and upper profile never rounded, but occipital region slightly elevated. Snout prominent, bluntly pointed, slightly longer than eye diameter, projecting beyond tip of lower jaw by a distance equal to one-third eye diameter. Nostrils large, two on each side. Anterior nostril slightly nearer to eye than to tip of snout; it is roundish with elevated rim. Posterior nostril immediately in front of eye; it is elliptical, wider than long with entire rim. Eye longer than wide, about one-third as long as postorbital length of head; upper margin of eye entering upper profile of head, but never projecting above it. Interorbital space flattish, the bony part about half as wide as eye diameter.

Mouth large, oblique; lower jaw included under closed mouth. Lower lip thickened, without a transverse fold; upper lip very thin. Upper jaw about half as long as head; maxillary largely free posteriorly, never hidden by skin, extending well beyond a vertical from hind border of eye. Jaws with broad bands of villiform teeth (5 or 6 irregular rows in upper jaw and about 8 irregular rows in lower); three canines anteriorly in upper jaw, of which 2 on right side and the rest one on left side; a pair of similar but larger canines on lower jaw anteriorly. A rather large elliptical patch of small, stout teeth on vomer and a broad band (about 5 irregular rows) of smaller teeth on each palatine. Tongue narrow, pointed and free at tip.

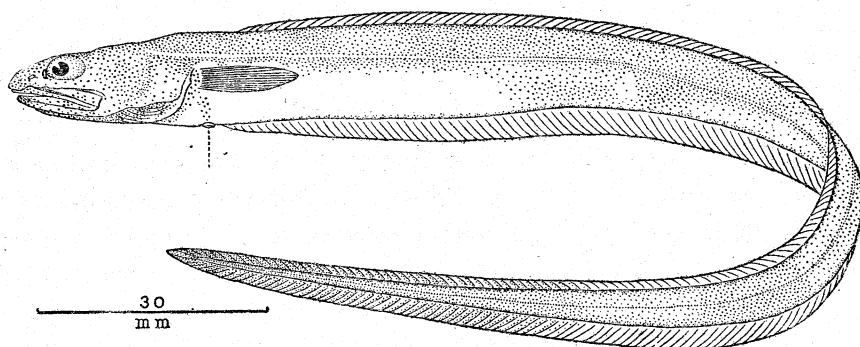


Fig. 1. *Carapus owasianus*, new species. holotype. Drawn by author.

Preopercle without free margin; both preopercle and opercle unarmed. Gill-membranes separated, free from isthmus; gill-openings continue forward from upper end of pectoral fin base to below rear end of maxillary. Gills 4; a slit, about half as long as eye diameter, behind last gill-arch. Three slender gill-rakers on lower limb of first arch next to angle, about two-fifths as long as snout; other gill-rakers tubercular. No pseudobranchiae. Vent opens behind base of pectoral fin; distance from vent to a vertical from pectoral fin base about 2.5 times in eye diameter.

Scales entirely absent. Lateral line represented by a well developed continuous tube, concurrent with back anteriorly, but runs along median line on sides of body from middle part of body posteriorly.

Distance of dorsal fin origin from head about two-sevenths as long as head. Dorsal fin very low, much lower than anal fin. Anal fin inserted immediately behind vent. Pectoral fin narrow, pointed, about half as long as head length, and slightly shorter than postorbital part of head. No ventrals.

Color in formalin light brown, covered with dark brown pigments except for throat and belly; top of head dark brown; pectoral fin pale; dorsal and anal fins pale anteriorly, becoming dark brown posteriorly; caudal fin dark brown; lining of buccal and branchial cavities pale, covered with dark brown pigments; peritoneum pale, thickly invested with dark brown pigments.

REMARKS: The present new species is apparently nearest akin to RENDAHL's *Fierasfer margaritiferae* (BEAUFORT and CHAPMAN, 1951: 452) known from the Indo-Australian archipelago in having the maxillary not hidden by the skin, strong canines in front of the jaws, small teeth on the vomer, and the vent opening behind the pectoral fin base, but undoubtedly differs from it in having a wider body (width 1.4 in height of body versus 2.2 to 2.4), a slenderer body (depth 16.8 in total length as compared to 9.4 to 11.6), a smaller eye (eye diameter 4.9 in head length versus 3.6 to 4.1), and in lacking a transverse fold on the lower lip (with a transverse fold in RENDAHL's species). It is also closely related to RICHARDSON's *Oxybeles homei* (RICHARDSON, 1844-1848: 74; GÜNTHER, 1862: 382; FOWLER, 1828: 445; HERRE, 1936: 416; BEAUFORT and CHAPMAN, 1951: 450) known also from the Indo-Australian archipelago in having the maxillary not hidden by the skin, and the moderately compressed body,

but is distinguished from the latter at least in having a vent opening behind the pectoral fin base (vent opens before the pectoral fin base in the latter), a slenderer body (depth 16.8 in total length as compared to 9.0 to 11.1 in the latter), and strong canines in front of both jaws (no real canines are present in front of the jaws in the latter), and also in lacking canines on the vomer (large curved canines are present in the latter).

It differs from *Fierasfer kagoshimanus* of STEINDACHNER and DÖDERLEIN (STEINDACHNER and DÖDERLEIN, 1887: 27; JORDAN and FOWLER, 1902: 751; FRANZ, 1911: 31) known from Harbor of Kagoshima and Sagami Bay at least in having strong canines in front of the jaws (canines are absent in the latter) and a vent opening behind the pectoral fin base (vent opens below the pectoral fin base in the latter).

Genus *Jordanicus* GILBERT, 1905

The genus *Jordanicus* GILBERT was established for the accommodation of *Fierasfer umbratilis* JORDAN and EVERMANN, and it was distinguished from the genus *Carapus* RAFINESQUE, 1810 by the depressed head, which is as broad as deep, and especially in the adnate maxillaries and the lack of a distinct lower lip (GILBERT, 1905: 656). Subsequently, some doubts have arisen as to the characteristics and validity of the genus *Jordanicus*. PARR stated in regard to this genus as: it seems advisable to avoid complete separation from the genus *Carapus* until the status of all previously described species of the latter relative to the definition of the new genus and the actual existence of a sharp division in point of the above mentioned features has been properly established. It is therefore suggested that the genus *Jordanicus* be provisionally regarded merely as a subgenus of the genus *Carapus*, *sensu lato* (PARR, 1930: 135). SCHMIDT stated in the description of *Carapus sagamianus* TANAKA as: JORDAN and HUBBS refer this species to the Hawaiian genus *Jordanicus* GILBERT, but it certainly cannot belong to it, The head of *Carapus sagamianus* is about twice as high as broad, the maxillaries are not adnate and the lower lip is distinct and in general its head is not differing from the head of *Carapus acus* BR. of the Mediterranean (SCHMIDT, 1931: 149).

In order to make an evaluation of the genus *Jordanicus* I have compared the seven specimens of TANAKA's *Carapus sagamianus* measuring 95.5 to 188.0 mm in total length taken from Owasi, Mie Prefecture with the holotype of the present new species. So far as my observations go, TANAKA's species seems referable to the genus *Jordanicus* as has been suggested by JORDAN and HUBBS (1925: 323), although the head is much higher than wide in these specimens. But attention must be paid to the fact that the maxillary is obviously adnate and the lower lip is scarcely distinct in the specimens of TANAKA's species, when compared to a largely free maxillary and a distinct lower lip in the holotype of the present new species.

References

- BEAUFORT, L. F. de and W. M. CHAPMAN 1951: The fishes of the Indo-Australian archipelago ix.

- Percomorphi (concluded), Blennioidea. xi+484 pp., 89 text-figs. Leiden.
- FOWLER, H. W. 1928: The fishes of Oceania. iii+540 pp., 82 text-figs., 49 pls. Mem. Bernice P. Bishop. Mus. x. Honolulu.
- FRANZ, V. 1910: Die japanische Knochenfische der Sammlungen HABERER und DOFLEIN. In Beiträge zur Naturgeschichte Ostasiens. Bayer Akad. der Wiss., Abhandl., Suppl. IV, 1: 1-135, 7 figs., 11 pls.
- GILBERT, C. H. 1905: Aquatic resources of the Hawaiian Islands. Section II. The deep-sea fishes. Bull U. S. Fish Comm., xxiii (2): i-xi, 575-713, figs. 230-276, pls. 66-101.
- GÜNTHER, A. 1862: Catalogue of the fishes in the British Museum, 4. xxi+534 pp. Brit. Mus. Nat. Hist., London.
- HERRE, A. W. 1936: Fishes of the CRANE Pacific expedition. Field Mus Nat. Hist., Zool. Ser., xxi: 1-472, figs. 1-50.
- JORDAN, D. S. and H. W. FOWLER 1902: A review of the ophidioid fishes of Japan. Proc. U. S. Nat. Mus., xxv (1303): 743-766, figs. 1-6.
- and C. L. HUBBS 1925: Record of fishes obtained by David Starr JORDAN in Japan, 1922. Mem. Carnegie Mus., x (2): 93-346, 1 fig., pls. 5-12.
- PARR, A. E. 1930: Teleostean shore and shallow-water fishes from the Bahama and Turks Island. Bull. Bingham Oceanogr. Coll., iii (4): 1-148, figs. 1-38.
- RICHARDSON, J. 1844-48: The zoology of the voyage of H. M. S. "Erebus and Terror", under the command of Capt. Sir J. C. ROSS during 1839-43, Part II. Fishes. 139 pp., 60 pls.
- SCHMIDT, P. J. 1931: Fishes of Japan, collected in 1901. Trans. Pacific Comm. Acad. Sci. USSR. ii: 1-176, figs. 1-30.
- STEINDACHNER, F. and L. DÖDERLEIN 1887: Beiträge zur Kenntniss der Fische Japan's (iv). Denkschr. Akad. Wiss., Wien, Liii: 1-40, pls. 1-4.
- TANAKA, S. 1908: Descriptions of eight new species of fishes from Japan. Annot Zool. Jap., vii (1): 27-47.
- 1611: Figures and Descriptions of the Fishes of Japan, ii: 19-34, pls. 6-10.